

Product datasheet for RC227497

Myosin Phosphatase (PPP1R12A) (NM_001143886) Human Tagged ORF Clone

Product data:

| | |
|---------------------------|--|
| Product Type: | Expression Plasmids |
| Product Name: | Myosin Phosphatase (PPP1R12A) (NM_001143886) Human Tagged ORF Clone |
| Tag: | Myc-DDK |
| Symbol: | Myosin Phosphatase |
| Synonyms: | GUBS; M130; MBS; MYPT1 |
| Mammalian Cell Selection: | Neomycin |
| Vector: | pCMV6-Entry (PS100001) |
| E. coli Selection: | Kanamycin (25 ug/mL) |
| ORF Nucleotide Sequence: | >RC227497 representing NM_001143886 Red=Cloning site Blue=ORF Green=Tags(s) |

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGCAGATGGCGGACGCGAAGCAGAAGCGGAACGAGCAGCTGAAACGCTGGATCGGCTCCGAGACGGACC
TCGAGCCTCCGGTGGTGAAGCGCCAGAAGACCAAGGTGAAGTTCGACGATGGCGCCGTCTCCTGGCTGC
TTGCTCCAGCGGCGACACGGACGAGGTCTCAAGCTGTCACCCGCGGCCGACATCAATTACGCCAAT
GTGGACGGACTCACTGCCCTGCACCAGGCTTGCAATGATGACAAATGTTGATATGGTGAAGTTTCTGGTAG
AAAATGGAGCAAATATTAATCAACCTGATAATGAAGGCTGGATACCACTACATGCAGCAGCTTCCTGTGG
ATATCTTGATATTGCAGAGTTTTGATTGGTCAAGGAGCAGATGTAGGGGCTGTCAACAGTGAAGGAGAT
ACACCTTTAGATATTGCGGAGGAGGAGGCAATGGAAGAGCTACTTCAAAATGAAGTTAATCGGCAAGGGG
TTGATATAGAAGCAGCTCGAAAGGAAGAAGAACGGATCATGCTTAGAGATGCCAGGCAGTGGCTAAATAG
TGGTCATATAAATGATGTCCGGCATGCAAAATCTGGAGGTACAGCACTTCACGTTGCAGCTGCTAAAGGC
TATACGGAAGTTTTAAACTTTTTAATACAGGCAGGCTATGATGTTAATATTAAGACTATGATGGCTGGA
CACCTCTTCATGCTGCAGCTCATTGGGGTAAAGAAGAAGCATGTCGAATTTAGTGGACAATCTGTGTGA
TATGGAGATGGTCAACAAAGTGGCCAAACAGCCTTTGATGTAGCAGATGAAGACATTTTAGGATATTTA
GAAGAGTTGCAAAAGAAACAAAATCTGCTCCATAGTGAAAAACGGGACAAGAAATCTCCACTAATTTGAAT
CAACAGCAAATATGGACAATAATCAGTCACAGAAGACCTTTAAAAACAAAGAGACGTTGATTATTGAACC
AGAGAAAAATGCATCCCGTATTGAATCTCTGGAACAAGAAAAGGTTGATGAAGAAGAAGAAGAAAAGAG
GATGAGCTAGCTGCTCTAGTGAAGAAGATGAGGAAGTACTCGGAATCAGAAGCTGAAACAGATAAGA
CAAAACCCTGGCTTCTGTAACCTAATGCCAACCTTCTAGTACACAAGCAGCTCCTGTAGCTGTTACAAC
ACCTACTGTGTCATCAGGTCAAGCAACCTACATCACCTATTAAGGTTTCCAACCACAGCTACAAAA
ATTTCTCCAAAGAAGAAGAGAGAAAAGATGAGTCTCCTGCAACTTGGAGTTAGGACTTAGAAAGACGG
GCAGCTATGGTCACTTGTGAAATCACAGCATCTAAGAGGGTCAGAAAGAAAAGATACTGCAGGTGT
TACACGTTCAAGTCCCAGACTTCTCCTCTTTGGATAATAAAGAAAAGGAGAAAGATAGTAAA



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GGAAGTGGCTTGCATATGTTGCACCTACAATACCAAGACGACTAGCCAGTACATCTGACATTGAAGAGA
 AAGAAAACAGAGATTCTTCAAGTTTGCGAACAAGTAGTTCATATACAAGGAGAAAATGGGAAGATGATCT
 TAAAAAATAGCTCAGTTAATGAAGGATCAACGTATCATAAAAGTTGCTCCTTTGGTAGAAGACAAGAT
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 ATGAGAAAAGAAAAGAGGAAAAGAGAAAACAAGATAAAGAGAAAACAAGAAAAGAAAGGAGTCAAG
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 CCAGTATCAACTCAAGTTCAACCACTCCATCCTTCTCACTTTCTACTATGAGCAGTTCACTGTATGCTT
 CAAGTCAACTAACAGGCCAAATAGTCTTGTAGGCATAACTTCTGCTTACTCCAGAGGAATAACAAAAGA
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 AAAATGAACAAGAACAAATCAGACACAGAAGAGGGATCCAATAAGAAAAGAACTCAGACGGATCCAT
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 TACAGTTACTTAGAAGAAAAGAAACCTTACAGCAGCAGGCTAGAAAAGGATGACTCAACTGACTTTAAAA
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 AACAGATCTTAAATTACAGTTGGAAAAGGCCACCCAGAGACAAGAAAAGATTTGCTGATAGATCACTGTTG
 GAAATGGAAAAAGGGAACGAAGAGCTCTAGAAAAGAAGATATCTGAAATGGAAGAAGAGCTCAAATGT
 TACCAGACCTAAAAGCAGACAACCAGAGGCTAAAGGATGAAAATGGGGCCTTGATCAGAGTTATAAGCAA
 ACTTTCCAAA

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence:

>RC227497 representing NM_001143886

Red=Cloning site Green=Tags(s)

MQMADAKQKRNEQLKRWIGSETDLEPPVVKRQTKVKFDDGAVFLAACSSGDTDEVLKLHHRGADINYAN
 VDGLTALHQACIDDNVDMVKFLVENGANINQPDNEGWIPLHAAASCGYLDIAEFLIGQGAHVAVNSEGD
 TPLDIAEEEEAMEELLQNEVNRQGVDEAARKEEERIMLRDARQWLNSGHINDVRHAKSGGTALHVAANKG
 YTEVLKLLIQAGYDVNIKDYDGWTPHAAAHWGKEEACRILVDNLCDMEMVNVKVGQTAFDVADEDILGYL
 EELQKKQNLHSEKRDKKSPLIESTANMDNNQSQKTFKNKETLIEPEKNASRIESLEQEKVDEEEEGKK
 DESSCSSEDEEDSESEAEATDKPLASVTNANTSSTQAAPVAVTPTVSSGQATPTSPIKKFPTTATK
 ISPKEEERKDESPATWRLGLRKTGSYGALAEITASKEGQKEKDTAGVTRSASSPRLSSSLDNKEKEKDSK
 GTRLAYVAPTIPRRLASTSDIEEKENRDSSSLRTSSSYTRRKWEDDLKKNSSVNEGSTYHKSCSFGRQRD
 DLISSVSTTSTPTVTSAAGLQKSLSSSTSTTKITGSSSAGTQSSTSNRLWAEDSTEKEKDSVPTAV
 TIPVAPTYYVNAASTTTLTITTTAGTVSSTTEVRERRRSYLPVREDEESESRKARSRQARQSRRTQGV
 LTDLQEAETIGRSRSTRREQEENEKEKEKEKQDKEKQEEKKESETSREDEYKQKYSRTYDETYQRYR
 PVSTSSSTTPSSSLSTMSSSLYASSQLNRPNSLVGITSAYSRGITKENEREKEKREEEKEGEDKSQPKSI
 RERRRPREKRRSTGVSWFTQSDENEQEQQSDTEEGSNKKETQTDISRYETSSTAGDRYDSSLGRSGS
 YSYLEERKPYSSRLEKDDSTDFKLYEQILAENEKLLKQLHDTNMELTDLKLQLEKATQRQERFADRSL
 LEMEKRRERLERRISEMEEELKMLPDLKADNQRLLKDENGALIRVISKLSK

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

Restriction Sites:

SgfI-MluI

Cloning Scheme:


ACCN: NM_001143886

ORF Size: 3093 bp

OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

- Reconstitution Method:**
1. Centrifuge at 5,000xg for 5min.
 2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
 3. Close the tube and incubate for 10 minutes at room temperature.
 4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
 5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

RefSeq: [NM_001143886.1](#), [NP_001137358.1](#)

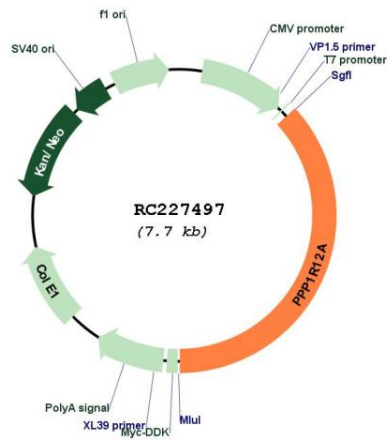
RefSeq Size: 5337 bp

RefSeq ORF: 2832 bp

Locus ID: 4659

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|--------------------------|---|
| UniProt ID: | <u>O14974</u> |
| Cytogenetics: | 12q21.2-q21.31 |
| Protein Families: | Druggable Genome |
| Protein Pathways: | Focal adhesion, Long-term potentiation, Regulation of actin cytoskeleton, Vascular smooth muscle contraction |
| MW: | 115.3 kDa |
| Gene Summary: | Myosin phosphatase target subunit 1, which is also called the myosin-binding subunit of myosin phosphatase, is one of the subunits of myosin phosphatase. Myosin phosphatase regulates the interaction of actin and myosin downstream of the guanosine triphosphatase Rho. The small guanosine triphosphatase Rho is implicated in myosin light chain (MLC) phosphorylation, which results in contraction of smooth muscle and interaction of actin and myosin in nonmuscle cells. The guanosine triphosphate (GTP)-bound, active form of RhoA (GTP.RhoA) specifically interacted with the myosin-binding subunit (MBS) of myosin phosphatase, which regulates the extent of phosphorylation of MLC. Rho-associated kinase (Rho-kinase), which is activated by GTP. RhoA, phosphorylated MBS and consequently inactivated myosin phosphatase. Overexpression of RhoA or activated RhoA in NIH 3T3 cells increased phosphorylation of MBS and MLC. Thus, Rho appears to inhibit myosin phosphatase through the action of Rho-kinase. Several transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jan 2009] |

Product images:



Circular map for RC227497